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## 8B9 - UNDERWOOD LAYLAH

Underfloor Air Distribution Systems (UFAD) are rapidly penetrated the office building arena across the United States because they provide a number of advantages, (and a few disadvantages) over conventional office building HVAC systems. This session will present new design approaches and new solutions that

UFAD GUIDE: Design, Construction, and Operation of Underfloor Air Distribution Systems incorporates updated results from laboratory and field experiments. Also included are simulation studies, manufacturer's literature, design experiences from practicing engineers, as well as other relevant guidelines from users of UFAD.

in paper form without permission of ASHRAE. Underfloor Air Distribution: Lessons Learned About the Author H By Allan Daly, P.E., Member ASHRAE Allan Daly, P.E., is a principal at Taylor Engineering, Alameda, Calif. VAC systems using underfloor air distribution (UFAD) promise multiple benefits. These include: 1 improving occupant satisfaction by

### Underfloor-Air-Distribution Design Concepts | HPAC Engineering

- ASHRAE 62.1-2013 VRP requires that if heating air supplied from the ceiling is less than 15° above room temperature but does not reach within 4.5 feet of the floor at 150FPM the outdoor air supply must be increased by 25%.
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### Underfloor Air Distribution Systems & UFAD Solutions ...

#### ASHRAE 90428 : Underfloor Air Distribution (UFAD) Design Guide

#### Underfloor Air Distribution (UFAD): The Complete Guide ...

#### ASHRAE DL Seminar on "ASHRAE Advanced Energy Design Guide ...

#### Underfloor Air Distribution: Lessons Learned

### Basics of Room Air Distribution - ASHRAE

The ASHRAE Underfloor Air Distribution Design Guide suggests that any building considering a raised floor for cable distribution should consider UFAD. [9] Specific space considerations should be taken when using UFAD systems in laboratories because of its critical room pressurization requirements and potential migration of chemicals into the access floor plenum due to spillage.

#### Underfloor Technology Overview

www.ctgn.qc.ca

Underfloor air distribution (UFAD) continues to gain popularity among building and facility owners due to the range of benefits it offers versus a traditional overhead system. Improved air quality, design flexibility, and reduced energy costs are all factors driving the adoption of this HVAC technology.

### Underfloor Air Distribution Temperature Control - AirFixture

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Design Guide to Underfloor Air Distribution convection the air rises toward the ceiling. Since people only breath air in a zone from approximately the floor to 6 feet, the space above this zone can be treated as a stratified air layer and the load components in this zone treated differently. The result is that air

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### UFAD Guide: Design, Construction and Operation of ... - ASHRAE

Project Objective Develop an ASHRAE Design Guide on Underfloor Air Distribution (UFAD) Systems. This research was conducted in collaboration with the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) as defined in the ASHRAE Research Project 1064-RP.

### Underfloor Air Distribution (UFAD) Design Guidance

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Underfloor air distribution derives its name from the use of the underfloor plenum below a raised (access) floor system to supply conditioned air directly into the occupied zone of the building, typically through floor diffusers.

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To address this situation, the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) initiated a research project to develop and publish a design guide on underfloor air distribution (UFAD) and task/ambient conditioning (TAC) systems.

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### Underfloor Air Distribution: Lessons Learned

The goal of a room air distribution system is to provide thermal comfort and a healthy living environment for occupants in the space. This article looks at designing such assemblies for comfort and indoor air quality (IAQ) per ASHRAE 55 and 62.1.

### Designing for Comfort & IAQ: Air distribution per ASHRAE ...

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### Design Guide to Underfloor Air Distribution

Return Air Design for Underfloor Air Distribution Overhead systems typically utilize duct pressures of .25 to 2 inches water column ("wc). Those systems are seldom concerned with return air pressure drop. If overhead systems have a return air pressure restriction, the room might become pressurized, but comfort will mostly be maintained.

### Underfloor Air Distribution (UFAD): The Complete Guide ...

The guide, entitled "Underfloor Air Distribution (UFAD) Design Guide," is complete (December 2003) and now available from ASHRAE. Standards: ASHRAE Standard 113-1990 (Method of Testing for Room Air Diffusion) is currently being revised to include a new standardized test and analysis method for evaluating the performance of UFAD and TAC systems.

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### Underfloor air distribution - Wikipedia

The Underfloor Air Distribution (UFAD) Design Guide is available from the ASHRAE. This guide, authored by CBE Research Specialist Fred Bauman and Allan Daly of Taylor Engineering, is the product of collaborative research and documentation by CBE and its industry members.

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Construction Phase Guidelines. Underfloor air distribution (UFAD) systems require good coordination between all building trades throughout the design and construction process. Shute (1995) provides an excellent list of recommendations for the design and construction of underfloor air distribution systems.

### Underfloor Technology Construction Guidelines

Underfloor Air Distribution Systems AIRFIXTURE UNDERFLOOR AIR DISTRIBUTION SYSTEMS More and more buildings today are opting to install Raised Access Floors and HVAC under floor air distribution systems for a variety of reasons, most notably flexibility for reconfiguring the office space and cost savings.

### Underfloor Air Distribution Systems & UFAD Solutions ...

Underfloor Air Distribution Temperature Control When it comes to air distribution system effectiveness, we will define perfect air distribution as air temperature at set point, well mixed throughout the lower two meters, consistent throughout the floor plate, and all these must occur at full and part load conditions.

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#### **Design Guide to Underfloor Air Distribution**

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